ABSTRACT

Coding techniques for a (e.g., OFDM) communication system capable of transmitting data on a number of "transmission channels" at different information bit rates based on the channels' achieved SNR. A base code is used in combination with common or variable puncturing to achieve different coding rates required by the transmission channels. The data (i.e., information bits) for a data transmission is encoded with the base code, and the coded bits for each channel (or group of channels with the similar transmission capabilities) are punctured to achieve the required coding rate. The coded bits may be interleaved (e.g., to combat fading and remove correlation between coded bits in each modulation symbol) prior to puncturing. The unpunctured coded bits are grouped into non-binary symbols and mapped to modulation symbols (e.g., using Gray mapping). The modulation symbol may be "pre-conditioned" and prior to transmission.